

## **Liposomal formulations for rheumatoid arthritis**

Eugénia Nogueira, Artur Cavaco-Paulo

*CEB - Centre of Biological Engineering, Universidade do Minho, 4710-057 Braga, Portugal*

Group: [BBRG](#) | Line: [Health Biotechnology and Bioengineering](#)

Rheumatoid arthritis (RA) is the most common inflammatory rheumatic disease, affecting almost 1% of the world population. Although the cause of RA remains unknown, the complex interaction between immune mediators (cytokines and effector cells) is responsible for the joint damage that begins at the synovial membrane. Activated macrophages are critical in the pathogenesis of RA and showed specifically express a receptor for the vitamin folic acid (FA), folate receptor  $\beta$  (FR $\beta$ ). This particular receptor allows internalization of FA-coupled cargo.

In this work we will address the potential of nanoparticles as an effective drug delivery system for therapies that will directly target activated macrophages. Special attention will be given to stealth degree of the nanoparticles as a strategy to avoid clearance by macrophages of the mononuclear phagocytic system (MPS).

This work summarizes the application of FA-target nanoparticles as drug delivery systems for RA and proposes prospective future directions [1].

- [1] Nogueira E, Gomes A C, Preto A, Cavaco-Paulo A, Folate-targeted nanoparticles for rheumatoid arthritis therapy, *Nanomed Nanotechnol Biol Med* 12 (2016) 1113-1126.